

PART 1 GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Section 31 05 16 - Aggregate Materials.
- .3 Section 31 23 10- Excavating, Trenching & Backfilling.
- .4 Section 32 11 23 - Aggregate Base Courses.

1.2 REFERENCES

- .1 American Society for Testing and Materials (ASTM).
 - .1 ASTM C117, Standard Test Method for Material Finer Than 0.075 mm Sieve in Mineral Aggregates by Washing.
 - .2 ASTM C131, Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
 - .3 ASTM C136, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - .4 ASTM D422, Standard Test Method for Particle-Size Analysis of Soils
 - .5 ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³) (600 kN-m/m³).
 - .6 ASTM D1557, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³) (2,700 kN-m/m³).
 - .7 ASTM D1883, Standard Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils.
 - .8 ASTM D4318, Standard Test Methods for Liquid Unit, Plastic Unit and Plasticity Index of Soils.
- .2 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-8.1, Sieves, Testing, Woven Wire, Inch series.
 - .2 CAN/CGSB-8.2, Sieves, Testing, Woven Wire, Metric.

1.3 WASTE MEASUREMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .2 Divert unused granular material from landfill to local facility as approved by Departmental Representative

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Granular sub-base material to Section 31 05 17 - Aggregate Materials and following requirements:

- .1 Crushed pit run or screened stone, gravel or sand.
.2 Granulations to be within limits specified when tested to ASTM C136 and ASTM C117 - sieve sizes to CAN/CGSB-8.1 CAN/CGSB-8.2.

- .1 Granulation to:

<u>Sieve Designation</u>	<u>% Passing (Base Type 2)</u>
50 mm	75-100
15.9 mm	45-80
4.75 mm	25-55
1.20 mm	12-35
0.30 mm	7-20
0.075 mm	3-8

- .3 Other properties as follows:

- .1 Liquid limit: to ASTM D4318, maximum 25.
.2 Plasticity index: to ASTM D4318, maximum 6.
.3 Los Angeles degradation: to ASTM C131. Max% Loss by mass: 40.

PART 3 EXECUTION

3.1 PLACING

- .1 Place granular sub-base after subgrade is inspected and approved by Departmental Representative.
.2 Construct granular sub-base to depth and grade in areas indicated.
.3 Ensure no frozen material is placed.
.4 Place material only on clean unfrozen surface, free from snow or ice.
.5 Begin spreading sub-base material on crown line or high side of one-way slope.
.6 Place granular sub-base materials using methods which do not lead to segregation or degradation.
.7 Place material to full width in uniform layers not exceeding 150 mm compacted thickness. Departmental Representative may authorize thicker lifts (layers) if specified compaction can be achieved.
.8 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.

- .9 Remove and replace portion of layer in which material has become segregated during spreading.

3.2 COMPACTION

- .1 Compaction equipment to be capable of obtaining required material densities.
- .2 Compacting:
 - .1 Compact to density of not less than 100% maximum dry density.
 - .2 Shape and roll alternately to obtain smooth, even and uniformly compacted sub-base.
 - .3 Apply water as necessary during compaction to obtain specified density.
 - .4 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers approved by Departmental Representative.
 - .5 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.

3.3 SITE TOLERANCES

- .1 Finished sub-base surface to be within 10 mm of elevation as indicated but not uniformly high or low.

3.4 PROTECTION

- .1 Maintain finished sub-base in condition conforming to this section until succeeding base is constructed, or until granular sub-base is accepted by Departmental Representative.

END OF SECTION